

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(Currently Amended)** A method for forming a two-dimensional ordered array of proteins, comprising:
 - contacting a population of proteins with a gas-aqueous interface;
 - laterally compressing said population to an appropriate pressure, such that a two-dimensional ordered array of said proteins is formed at said interface, wherein said proteins are not solubilized using detergent.
 2. **(Cancelled).**
 3. **(Previously Presented)** The method of claim 64, wherein said amphiphilic molecule comprises a protein.
 4. **(Previously Presented)** The method of claim 1, wherein said protein is a membrane protein, a cellular receptor, an orphan receptor, receptor tyrosine kinase, an EPH receptor, an ion channel, a cytokine receptor, an multisubunit immune recognition receptor, a chemokine receptor, a growth factor receptor, or a G-protein coupled receptor.
 5. **(Previously Presented)** The method of claim 1, wherein said protein is contacted with said interface in the presence of lipids.
 6. **(Previously Presented)** The method of claim 1, further comprising applying said proteins to said interface in proteoliposomes, liposomes, or a cellular membrane.
 7. **(Cancelled).**
 8. **(Currently Amended)** The method of claim 1, wherein said interface is an air-aqueous interface.
- Claims 9-62 **(Cancelled).**

63. (Currently Amended) A method for forming a two- or three-dimensional ordered array of water insoluble membrane proteins, comprising:

contacting a population of water insoluble membrane proteins with a gas-aqueous interface, wherein said population of membrane proteins are applied to said interface in a proteoliposome;

laterally compressing said population to an appropriate pressure, such that a two- or three-dimensional ordered array of said water insoluble membrane proteins is formed at said gas-aqueous interface.

64. (Currently Amended) A method for forming a three-dimensional ordered array of ~~amphiphilic molecules~~ water insoluble membrane proteins, comprising:

contacting a population of ~~amphiphilic molecules~~ water insoluble membrane proteins with a gas-aqueous interface;

laterally compressing said population to an appropriate pressure, such that a three-dimensional ordered array of said ~~amphiphilic molecules~~ water insoluble membrane proteins is formed at said interface, wherein said appropriate pressure is above a critical density point for the formation of a two-dimensional ordered array of said ~~amphiphilic molecules~~ water insoluble membrane proteins molecules.

Claims 65-66. **(Cancelled).**

67. (Previously Presented) The method of claim 1, wherein said two-dimensional ordered array is a two-dimensional crystalline array.

68. (Previously Presented) The method of claim 64, wherein said three-dimensional ordered array is a three-dimensional crystalline array.

69. (Previously Presented) The method of claim 3, wherein said protein is a membrane protein, a cellular receptor, an orphan receptor, receptor tyrosine kinase, an EPH receptor, an ion channel, a cytokine receptor, an multisubunit immune recognition receptor, a chemokine receptor, a growth factor receptor, or a G-protein coupled receptor.

70. (Previously Presented) The method of claim 3, wherein said protein is contacted with said interface in the presence of lipids.

71. (Previously Presented) The method of claim 3, further comprising applying said proteins to said interface in proteoliposomes, liposomes, or a cellular membrane.

Claims 72-73 (Cancelled).

74. (New) A method for forming a two- or three- dimensional ordered array of proteins suitable for use in crystallography to determine said protein's structure, comprising:

contacting a population of proteins with a gas-aqueous interface;
laterally compressing said population to an appropriate pressure, such that a two-dimensional ordered array of said proteins is formed at said interface, wherein the structure of said protein using said two- or three- dimensional ordered array can be determined to a resolution of 5 Å or higher.

75. (New) A method for forming a two-dimensional ordered array of proteins, comprising:

contacting a population of proteins with a gas-aqueous interface;
laterally compressing said population to an appropriate pressure, such that a two-dimensional ordered array of said proteins is formed at said interface, wherein said two-dimensional ordered array is formed in the absence of a ligand of said protein.

76. (New) A method for forming a two- or three-dimensional ordered array of water insoluble membrane proteins, comprising:

contacting a population of water insoluble membrane proteins with a gas-aqueous interface;
laterally compressing said population to an appropriate pressure, such that a two- or three-dimensional ordered array of said water insoluble membrane proteins is formed at said gas-aqueous interface.